

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Any claims that have been cancelled are to be considered cancelled without prejudice as to their resubmission:

Listing of Claims:

Claims 1-21 (Cancelled)

22. (Previously presented) A data analyzer for use with a pattern classifier to compress a set of indexed data having common characteristics and noise, comprising:

- a. means for determining a common characteristic threshold for the indexed data set;
- b. means for removing indices having an ensemble statistic higher than the common characteristic threshold value in order to provide a retained dataset, wherein the ensemble statistic is a statistic taken from across a set of spectra;
- c. means for calculating the ensemble statistic of each retained index in the retained dataset;
- d. means for determining a noise threshold;
- e. means for removing indices from the retained dataset wherein the ensemble statistic is lower than a noise threshold value; and
- f. means for normalizing the indexed data.

23. (Original) The data analyzer according to claim 22, wherein the normalization means is configured to process the indexed data prior to processing by the common characteristic threshold means.

24. (Original) The data analyzer according to claim 22, wherein the normalization means is configured to process the indexed data after processing by the common characteristic threshold means.
25. (Original) The data analyzer according to claim 22, wherein the normalization means comprises means for normalizing a member of the set to the standard deviation of the member.
26. (Original) The data analyzer according to claim 22, wherein the normalization means comprises means for normalizing a member of the set to the maximum value of the member.

Claims 27-51 (Cancelled)

52. (Previously presented)

A method for classifying a set of indexed data that includes obtaining a collection of control spectra obtained via mass spectrometry, comprising the steps of :

- a. calculating an ensemble statistic at each index in the control spectra obtained via mass spectrometry, wherein the ensemble statistic is a statistic taken from across a set of spectra;
- b. identifying those indices at which the ensemble statistic exceeds a first selected threshold;
- c. removing the identified indices from all spectra in the set of indexed data to provide a set of compressed indexed data;
- d. calculating an ensemble statistic at each index of the compressed indexed data;
- e. removing all indices from each compressed spectrum that have an ensemble statistic that is lower than a second selected threshold value to provide a set of reduced indexed data;

- f. extracting a feature portion of each of the reduced indexed data to provide a set of feature spectra;
- g. classifying the set of feature spectra into clusters; and

wherein the step of calculating the ensemble statistic at each index in the control spectra comprises computing an ensemble variance of the control spectra.

53. (Currently amended)

A method for classifying a set of indexed data that includes obtaining a set of control spectra obtained via mass spectrometry, comprising the steps of:

- a. calculating an ensemble statistic at each index in the control spectra obtained via mass spectrometry, wherein the ensemble statistic is a statistic taken from across a set of spectra;
- d. identifying those indices at which the ensemble statistic exceeds a first selected threshold;
- e. c. removing the identified indices from all spectra in the set of indexed data to provide a set of compressed indexed data;
- d. calculating an ensemble statistic at each index of the compressed indexed data;
- e. removing all indices from each compressed spectrum that have an ensemble statistic that is lower than a second selected threshold value to provide a set of reduced indexed data;
- f. extracting a feature portion of each of the reduced indexed data to provide a set of feature spectra;
- g. classifying the set of feature spectra into clusters; and

wherein the step of calculating the ensemble statistic at each index of the compressed indexed data comprises computing an ensemble variance of the compressed indexed data.